IN THE CLAIMS

Claims 1-23 (cancelled).

Claim 24 (currently amended): A packaged micromechanical device, comprising:

a semiconductor chip having an integrated circuit including a plurality of micromechanical components configured in a plane in the central portion of a first surface of said chip, and a plurality of terminals disposed in peripheral portions of said first surface of said chip;

an electrically insulating substrate having first and second surfaces and an opening, said surfaces being substantially parallel to each other;

a wafer having a surface including:

a plurality of said chips;

said <u>entire</u> wafer surface being coated with a protective material including said micromechanical components;

a plurality of electrically conductive routing lines integral with said substrate;

a first plurality of contact pads disposed on said first surface of said substrate, adjacent said opening and connected to at least one of said routing lines;

a second plurality of contact pads disposed on said first surface of said substrate, remote from said opening and connected to at least one of said routing lines;

solder electrically connecting said terminals in peripheral portions of said first surface of said chip to said first plurality of contact pads, such that said first surface of said chip covers said opening in said substrate;

an encapsulant between said first surface of said chip and said substrate around said opening, said encapsulant leaving a second surface of said chip exposed; and

a lid adhered to said second surface of said substrate covering said opening in said substrate.

Claim 25 (previously presented): The packaged device according to Claim 24 wherein said micromechanical device is a digital micromirror device.

Claim 26 (previously presented): The packaged device according to Claim 24 wherein said micromechanical components are micromirrors.

Claim 27 (previously presented): The packaged device according to Claim 24 wherein said insulating substrate is made of ceramic having a single level metallization.

Claim 28 (previously presented): The packaged device according to Claim 27 wherein said conductive routing lines and said first and second pluralities of contact pads are in said single level metallization.

Claim 29 (previously presented): The packaged device according to Claim 24 further comprising ridge-like protrusions formed in said ceramic substrate and positioned under said lid, suitable for storing a passivant.

Claim 30 (previously presented): The packaged device according to Claim 29 wherein said passivant is a pill or granular material suitable for gradual release to continuously coat contacting surfaces of said micromechanical components.

Claim 31 (previously presented): The packaged device according to Claim 24 wherein said solder is selected from a group consisting of lead/tin, indium, tin/indium, tin/silver, tin/bismuth, solder paste, and solder-coated spheres.

Claim 32 (previously presented): The packaged device according to Claim 24 wherein said encapsulant comprises an epoxy-based material filled with silica and anhydrides.

Claim 33 (previously presented): The packaged device according to Claim 24 wherein said lid is a plate made of glass or any other material transparent to light in the visible range of the electromagnetic spectrum.

Claim 34 (previously presented): The packaged device according to Claim 24 wherein said lid is adhered to said second substrate surface by an epoxy adhesive.

Claim 35 (previously presented): The packaged device according to Claim 24 further having a plurality of solder balls disposed on said second plurality of contact pads.

Claim 36 (withdrawn): A method of packaging a micromechanical semiconductor device, comprising the steps of:

providing an integrated circuit chip including a plurality of micromechanical components covered by a protective material and configured in a plane in the central portion of said chip, said chip further including a plurality of terminals disposed in peripheral portions of said chip;

providing an electrically insulating substrate having first and second surfaces and an opening, a first plurality of contact pads disposed on said first surface adjacent said opening, and a second plurality of contact pads disposed on said first surface remote from said opening;

soldering said terminals in peripheral portions of said chip to said first plurality of contact pads disposed on said first surface of said substrate such that said chip covers said opening in said substrate;

inserting an encapsulant between said chip and said substrate around said opening in said substrate;

removing said protective material, thereby exposing said micromechanical components; and

attaching a lid to said second substrate surface, said lid covering said opening in said substrate.

Claim 37 (withdrawn): The method of Claim 36, wherein said step of providing an integrated circuit chip comprises the steps of:

providing a semiconductor wafer having a surface including a plurality of micromechanical integrated circuits, each of said integrated circuits including a terminal;

coating said wafer surface with a protective material;

selectively removing said protective material to expose said terminal on each of said integrated circuits;

depositing solder on each of said exposed terminals; and

separating the resulting structure into discrete integrated circuit chips.

Claim 38 (withdrawn): The method according to Claim 36 wherein said step of soldering comprises the steps of:

depositing a solder ball on at least one of said plurality of terminals disposed in peripheral portions of said chip;

aligning said chip and said substrate so that said solder ball is placed into proximity with one of said contact pads on said substrate;

contacting said ball and said contact pad;

supplying thermal energy to said chip and said substrate, whereby said solder is reflowed to form a solder joint and said chip is mounted to said substrate spaced apart by a gap, forming an assembly;

controlling the height of said solder joint;

cooling said assembly from the reflow temperature to a temperature still elevated above ambient temperature and maintaining said elevated temperature at a substantially constant level;

inserting a polymeric precursor between said chip and said substrate at said elevated temperature, thereby surrounding said opening with said precursor;

supplying additional thermal energy for curing said polymeric precursor, thereby forming a polymeric encapsulant; and

cooling said assembly to ambient temperature.

Claim 39 (withdrawn): The method according to Claim 37 wherein said elevated temperature is between 90 and 130 °C.

Claim 40 (withdrawn): The method according to Claim 37 wherein said elevated temperature is approximately 100 °C.

Claim 41 (withdrawn): The method according to Claim 36 wherein said step of controlling the height of said solder joint comprises the steps of:

applying radiant energy sufficient to put said solder ball into a liquid state;

contacting the ball to said contact pad;

dwelling for metallurgical interaction;

establishing desired connection height; and

removing said radiant energy.

Claim 42 (withdrawn): The method according to Claim 36 further comprising the step of disposing a plurality of solder balls onto said second plurality of contact pads.

Claim 43 (withdrawn): The method according to Claim 36 further comprising the step of depositing a passivant in said substrate opening before attaching said lid to said second substrate surface.

Claim 44 (withdrawn): The method according to Claim 36 wherein said protective material is a layer of photoresist material.